UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/160,894	07/15/2008	Srirama V. Swaminathan	2006P00027WOUS	6128

38107 7590 04/26/2017

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
465 Columbus Avenue
Suite 340
Valhalla, NY 10595

EXAMINER
TURCHEN, ROCHELLE DEANNA

ART UNIT	PAPER NUMBER
3777	

NOTIFICATION DATE	DELIVERY MODE
04/26/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

marianne.fox@philips.com
debbie.henn@philips.com
patti.demichele@philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SRIRAMA V. SWAMINATHAN

Appeal 2015-001057
Application 12/160,894
Technology Center 3700

Before JENNIFER D. BAHR, EDWARD A. BROWN, and BRANDON J. WARNER, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Srirama V. Swaminathan (Appellant)[1] appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 5–12, 21–23, and 26–28. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

---

[1] According to Appellant, the real party in interest is KONINKLIJKE PHILIPS N.V. Appeal Br. 2.

THE CLAIMED SUBJECT MATTER

Claim 5, reproduced below, is illustrative of the claimed subject matter.

> 5. A breast imaging method comprising:
>
> acquiring magnetic resonance data of one or both breasts of a subject using a dual breast coil coupled with said one or both breasts, the acquiring employing at least four independent channels per breast, the dual breast coil including at least four independent acquisition channels per breast wherein the at least four independent acquisition channels for each breast include acquisition channels defined by (i) at least one conductor positioned anterior of the breast, (ii) at least one conductor positioned posterior of the breast, (iii) at least one conductor positioned above the breast, (iv) at least one conductor positioned below the breast, (v) at least one conductor positioned lateral of the breast, and (vi) at least one conductor positioned medial of the breast, wherein at least one of the four independent acquis[i]tion channels is defined by an electrical or inductive coupling between two of the conductors; and
>
> processing the acquired magnetic resonance data to generate elasticity data.

REJECTIONS

I. Claims 5 and 21–23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel (US 2005/0245805 A1, pub. Nov. 3, 2005), Qu (US 2005/0104591 A1, pub. May 19, 2005), and Meaney (US 2006/0012367 A1, pub. Jan. 19, 2006).

II. Claims 6, 8, and 11 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel, Qu, Meaney, and Edelman (US 2003/0135106 A1, pub. July 17, 2003).

III. Claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel, Qu, Meaney, Edelman, and Ma (US 2006/0094952 A1, pub. May 4, 2006).

IV. Claim 9 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel, Qu, Meaney, Edelman, and Van Zijl (US 6,943,033 B2, iss. Sept. 13. 2005).

V. Claim 10 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel, Qu, Meaney,[2] Edelman, and deCharms (US 2002/0103428 A1, pub. Aug. 1, 2002).

VI. Claim 12 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel, Qu, Meaney, Edelman, and Wedeen (US 2002/0042569 A1, pub. Apr. 11, 2002).

VII. Claims 26–28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hoppel, Qu, Meaney, and Lee (US 2004/0073106 A1, pub. Apr. 15, 2004).

DISCUSSION

Each of Appellant's independent claims 5 and 22 requires at least four independent channels per breast for acquiring magnetic resonance data, wherein the at least four independent channels include at least one anterior conductor, at least one posterior conductor, at least one superior conductor, at least one inferior conductor, at least one lateral conductor, and at least one

[2] Although the Examiner omits Meaney in the statement of this rejection, the rejection refers to the combination "as applied to claim 8 above." Final Act. 8; Ans. 7. As the combination applied to claim 8 includes Meaney, and claim 10 depends from claim 8, we understand the combination applied in the rejection of claim 10 to include Meaney.

medial conductor,[3] "wherein at least one of the four independent channels is defined by an electrical or inductive coupling between two of the conductors." Appeal Br. 13 (Claims App.); *see id.* at 11 (Claims App.).

The Examiner explains that claims 5 and 22 recite broadly only "an 'electrical coupling' and [do] not require a specific configuration in which the electrical coupling between two of the conductors occurs." Ans. 10. Thus, the Examiner's position is that, because "Hoppel . . . disclose[s] 'connected to first and second coils 212, 214 is a signal wire 330 with a connector 340 and an end thereof for providing signal communication to and from first and second coils 212, 214, and a control station,'" and "[t]he signal wire is depicted as a single wire in [F]igure 2" of Hoppel, an electrical signal must be provided through signal wire 330 "as well as through the coils in order to provide signal communication." *Id.* (quoting Hoppel, para. 21). The Examiner then emphasizes that claims 5 and 22 do not require that "the coils be 'directly' electrically coupled." *Id.* According to the Examiner, in Hoppel, "the coils are . . . electrically coupled through the connection of the coils to the control station via the signal cable." *Id.* The Examiner explains further that Qu "was relied upon to more explicitly disclose the electrical coupling, specifically Qu . . . discloses an electrical arrangement of the coil elements within a signal MRI array coil system." *Id.* at 10–11 (citing Qu, para. 39).

In the Final Action, the Examiner conceded that "Hoppel . . . fails to disclose electrical coupling of two of the conductors," but found that Qu

[3] The modifiers "anterior," "posterior," "superior," "inferior," "lateral," and "medial" denote the positioning of the conductors relative to the breast(s) to be imaged.

teaches "in the same medical field of endeavor, an electrical arrangement between two conductors." Final Act. 9 (citing Qu, para. 39). The Examiner then determined it would have been obvious "to modify the conductors creating a channel of Hoppel . . . with electrical coupling of two conductors to provide data acquisition from the coils." *Id.*

Appellant contends that "Hoppel at no point teaches that at least one of the four acquisition channels '*is defined by an electrical or inductive coupling between two of the conductors*,'" as recited in independent claims 5 and 22. Appeal Br. 4; *see id.* at 6. Appellant also submits that "there is no teaching or suggestion in the entirety of Qu of a coupling of conductors," and, "[t]herefore, Qu does not cure the deficiencies of Hoppel." *Id.* at 5, 6. Appellant adds that the Examiner's statement referencing Qu's disclosure of "an electrical arrangement between two conductors" constitutes an acknowledgement "that there is no teaching in Qu of electrical or inductive coupling, but rather just the vague concept of an electrical arrangement." *Id.* at 5–6.

The Examiner's statement that claims 5 and 22 recite broadly only an electrical coupling between two of the conductors, without reciting a specific configuration in which that electrical coupling occurs (Ans. 10), is an oversimplification of the "electrical or inductive coupling" limitation in the claims. More specifically, claims 5 and 22 require two of the conductors to be electrically or inductively coupled in a manner *to define an acquisition channel*.

Hoppel's signal wire 330 and connector 340 connect coils 212 and 214 to the control station for providing signal communication between coils 212 and 214 and the control station. Hoppel, paras. 21, 24. As such, coils

212 and 214 might be considered broadly to be electrically coupled to one another, indirectly, via the control station. However, Hoppel gives no indication that coils 212 and 214 are coupled to one another as specified in the claim, namely, *to define an acquisition channel* for acquiring magnetic resonance data. In fact, to the contrary, Hoppel describes each of coils 212, 214, 222, and 224 as being a separate channel in "a four-channel breast coil assembly." *Id.*, para. 27; *see* Fig. 5. Hoppel expressly discloses winding inductors 270 of coils 212 and 214, as well as inductors 270 of coils 222 and 224, "in opposite directions to cancel out mutual inductance between the coils in the left/right direction" or using "other means for canceling out the mutual inductance between the left/right coils." *Id.*, para. 28; Fig. 5. Further, Hoppel discloses that first pair of coils 210 (i.e., coils 212 and 214) and second pair of coils 220 (i.e., coils 222 and 224) "are *decoupled* by means of distance 238," as illustrated in Figure 1. *Id.*, para. 30 (boldface omitted). Moreover, Hoppel discloses that each coil is "configured to be operational independent of each of" the other coils. *Id.*, para. 9; *see also id.*, para. 24. Thus, Hoppel does not disclose, by a preponderance of the evidence, a channel defined by an electrical or inductive coupling between coils 212 and 214 (or between any other two coils), as called for in claims 5 and 22.

Qu does not make up for this deficiency in Hoppel. Qu's description of the "electrical arrangement of the coil elements" in paragraph 39 and depiction of this arrangement in Figures 11 and 12 does not indicate a coupling of any pairs of the coil elements (loop coils) to define an acquisition channel. In the Advisory Action, dated March 14, 2014, the Examiner referred to Qu's disclosure of "a distinct circuitry arrangement of

a right wing of coils (22 and 23) and a separate circuitry arrangement of a left wing of coils (28 and 29)." Adv. Act. 2 (citing Qu, para. 47). Figures 11 and 12 (discussed by Qu in paragraph 39) and Figures 23 and 24 (discussed by Qu in paragraph 47) appear to depict coils 22 and 23 overlapping with, or crossing over, one another, and coils 28 and 29 overlapping with, or crossing over, one another. However, paragraphs 39 and 47 cited by the Examiner give no indication that coils 22 and 23 or coils 28 and 29 are coupled electrically or inductively to form an acquisition channel, nor does the Examiner direct our attention to any other portion of Qu providing such a teaching. Thus, the Examiner's rationale for modifying the conductors creating a channel of Hoppel by providing an electrical coupling of two of the conductors to provide data acquisition from the coils (Final Act. 10) is predicated on unsupported findings regarding the teachings of Qu.

For the above reasons, the Examiner fails to establish, by a preponderance of the evidence, either that Hoppel discloses at least one of the independent channels being defined by an electrical or inductive coupling between two of the conductors, as required in independent claims 5 and 22, or that Qu provides any teaching that would make up for this deficiency in Hoppel. Further, the Examiner does not rely on any of the remaining references (Meaney, Edelman, Ma, Van Zijl, deCharms, Wedeen, or Lee) for any teaching directed to such a coupling. Ans. 4–9. Accordingly, we do not sustain the rejections of independent claims 5 and 22, or their dependent claims 6–12, 21, 23, and 26–28, under 35 U.S.C. § 103(a).

DECISION

The Examiner's decision rejecting claims 5–12, 21–23, and 26–28 is REVERSED.

REVERSED